

Response to Amendment

1. Based on applicant's amendment, telephone interview and fax inquiry filed on April 30, 2008, with respect to cancellation of claim 4, and amended claims 1, 9, 10, 14, 15, 16, 17, 18 and 19, have been fully considered and are persuasive, upon further consideration the rejection, of 102(e) and 103(a) for claims 1-3 and 5-19, are hereby withdrawn.

The claims 1-3 and 5-19 now renumbered as 1-18 are allowed.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it must be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Applicants Attorney (Mr. W. Nicholas Chen, Reg No. 56,665), on April 30, 2008, without traverse.

Cancel claim 4.

The amended claims 1, 9, 10, 14, 15, 16, 17 and 18 as follows:

Claim 1. (Currently Amended) An image-capturing apparatus comprising:
an image-capturing unit having a plurality of pixels disposed two-dimensionally;
an addition pattern generating unit configured to specify an addition pattern;

an adding unit configured to generate an image by adding according to the addition pattern, outputs of selected pixels present around a given pixel at the image-capturing unit to an output of the given pixel, wherein the selected pixels are chosen according to the addition pattern; and

an image processing unit configured to process the image resulting from addition executed by the adding unit according to a type of image processing;

wherein:

the addition pattern generating unit specifies different addition patterns corresponding to different types of image processing; and

when the image processing unit switches from a first type of image processing to a second type of image processing;

the addition pattern generating unit changes the specified addition pattern from an addition pattern corresponding to the first type of image processing to an addition pattern corresponding to the second type of image processing; and

the adding unit switches from the addition pattern corresponding to the first type of image processing to the addition pattern corresponding to the second type of image processing when adding outputs of selected pixels

Claim 9. (Currently Amended) An image-capturing apparatus comprising:

an image-capturing unit having a plurality of pixels disposed two-dimensionally;

an addition pattern generating unit configured to specify an addition pattern according to a vehicular behavior detected by a vehicular behavior detection device;

an adding unit configured to generate an image by adding according to the addition pattern, outputs of selected pixels present around a given pixel at the image-capturing unit to an output of the given pixel, wherein the selected pixels are chosen according to the addition pattern; and

an image processing unit configured to process the image resulting from addition executed by the adding unit;

wherein:

the addition pattern generating unit specifies different addition patterns corresponding to different types of vehicular behaviors; and

when the detected vehicular behavior changes from a first type of vehicular behavior to a second type of vehicular behavior;

the addition pattern generating unit changes the specified addition pattern from an addition pattern corresponding to the first type of vehicular behavior to an addition pattern corresponding to the second type of vehicular behavior; and

the adding unit switches from the addition pattern corresponding to the first type of vehicular behavior to the addition pattern corresponding to the second type of vehicular behavior when adding outputs of selected pixels.

Claim 10. (Currently Amended) An image-capturing apparatus comprising:

an image-capturing unit having a plurality of pixels disposed two-dimensionally;

an addition pattern generating unit configured to specify an addition pattern according to a type of vibration of the image-capturing apparatus detected by a vibration detection unit;

an adding unit configured to generate an image by adding according to the addition pattern, outputs of selected pixels present around a given pixel at an image-capturing unit having a plurality of pixels disposed two-dimensionally to an output of the given pixels, wherein the selected pixels are chosen according to the addition pattern; and

an image processing unit configured to process the image resulting from addition executed by the adding unit;

wherein:

the addition pattern generating unit specifies different addition patterns corresponding to different types of vibration of the image-capturing apparatus; and

when the detected vibration of the image-capturing apparatus changes from a first type of vibration to a second type of vibration;

an addition pattern generating unit changes the specified addition pattern from an addition pattern corresponding to the first type of vibration to an addition pattern corresponding to the second type of vibration; and

the adding unit switches from the addition pattern corresponding to the first type of vibration to the addition pattern corresponding to the second type of vibration when adding outputs of selected pixels.

Claim 14. (Currently Amended) An image-capturing apparatus comprising:

image-capturing means, having a plurality of pixels disposed two-dimensionally; for capturing images;

an addition pattern generating means for generating an addition pattern;

adding means for generating an image by adding according to the addition pattern, outputs of selected pixels present around a given pixel at the image-capturing means to an output of the given pixels, wherein the selected pixels are chosen according to the addition pattern; and

image processing means for processing the image resulting from addition executed by the adding means, according to a type of image processing:

wherein:

the addition pattern generating means specifies different addition patterns corresponding to different types of image processing; and

when the image processing means switches from a first type of image processing to a second type of image processing:

the addition pattern generating means changes the specified addition pattern from an addition pattern corresponding to the first type of image processing to an addition pattern corresponding to the second type of image processing; and

the adding means switches from the addition pattern corresponding to the first type of image processing to the addition pattern corresponding to the second type of image processing when adding outputs of selected pixels .

Claim 15. (Currently Amended) An image-capturing apparatus comprising:
image-capturing means, having a plurality of pixels disposed two-dimensionally, for generating images;

addition pattern generating means for specifying an addition pattern according to a vehicular behavior detected by a vehicular behavior detection device;

adding means for generating an image by adding according to the addition

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pattern, outputs of pixels present around a given pixel at the image-capturing means to an output of the given pixel, wherein the selected pixels are chosen according to the addition pattern;
and

an image processing means for processing the image resulting from addition executed by the adding means;

wherein:

the addition pattern generating means specifies different addition patterns corresponding to different types of vehicular behaviors; and

when the detected vehicular behavior changes from a first type of vehicular behavior to a second type of vehicular behavior;

the addition pattern generating means changes the specified addition pattern from an addition pattern corresponding to the first type of vehicular behavior to an addition

pattern corresponding to the second type of vehicular behavior; and

the adding means switches from the addition pattern corresponding to the first type of vehicular behavior to the addition pattern corresponding to the second type of vehicular behavior when adding outputs of selected pixels.

Claim 16. (Currently Amended) An image-capturing apparatus comprising:

an image-capturing means, having a plurality of pixels disposed two-dimensionally, for capturing images;

an addition pattern generating means for specifying an addition pattern according to a type of vibration of the image-capturing means detected by a vibration detection unit;

adding means for generating an image by adding according to the addition pattern, outputs of selected pixels present around a given pixel at an image-capturing means having a plurality of pixels disposed two-dimensionally to an output of the given pixels, wherein the selected pixels are chosen according to the specified addition pattern; and

image processing means for processing the image resulting from addition executed by the adding means;

wherein:

the addition pattern generating means specifies different addition patterns corresponding to different types of vibration of the image-capturing apparatus; and

when the detected vibration of the image-capturing apparatus means changes from a first type of vibration to a second type of vibration:

the addition pattern generating means changes the specified addition pattern from an addition pattern corresponding to the first type of vibration to an addition pattern corresponding to the second type of vibration; and

the adding means switches from the addition pattern corresponding to the first type of vibration to the addition pattern corresponding to the second type of vibration when adding outputs of selected pixels.

Claim 17. (Currently Amended) An image-capturing apparatus comprising:
generating an addition pattern according to a type of image processing;
generating an image by adding according to the addition pattern, outputs of selected pixels present around a given pixel at the image-capturing unit having a plurality pixels

disposed two-dimensional to an output of the given pixel, wherein the selected pixels are chosen according to the addition pattern, and different addition patterns are generated corresponding to different types of image processing; and

processing the image resulting form addition of pixel outputs, according to the type of image processing;

wherein when the image processing the image switches from a first type of image processing to a second type of image processing;

the addition pattern is changes from an addition pattern corresponding to the first type of image processing to an addition pattern corresponding to the second type of image processing; and

the adding of the outputs of selected pixels is changed for utilizing the addition pattern corresponding to the first type of image processing to utilizing the addition pattern corresponding to the second type of image processing.

Claim 18. (Currently Amended) An image-capturing apparatus comprising:
generating an addition pattern according to a detected vehicular behavior, wherein different addition patterns corresponding to different types of vehicular behaviors;

generating an image by adding according to the addition pattern, outputs of selected pixels present around a given pixel at the image-capturing unit having a plurality of pixels disposed two-dimensionally to an output of the given pixel, wherein the selected pixels are chosen according to the addition pattern;

processing the image resulting from addition of pixel output;

wherein:

when the detected vehicular behavior changes from a first type of vehicular behavior to a second type of vehicular behavior;

the addition pattern is changed from an addition pattern corresponding to the first type of vehicular behavior to an addition pattern corresponding to the second type of vehicular behavior;
and

the adding of the outputs of selected pixels is changed from utilizing the addition pattern corresponding to the first type of vehicular behavior to utilizing the addition pattern corresponding to the second type of vehicular behavior.

Claim 19. (Currently Amended) An image-capturing apparatus comprising:

generating an addition pattern according to a type of vibration of the an image-capturing apparatus, wherein different addition patterns are generated corresponding to different types of vibration of the image-capturing apparatus;

generating an image by adding according to the addition pattern, outputs of selected pixels present around a given pixel at an image-capturing unit having a plurality of pixels disposed two-dimensionally to an output of the given [pixel] pixels, wherein the selected pixels are chosen according to the addition pattern; and

processing the image resulting from addition of pixel output;

wherein:

when the detected vibration of the image-captured apparatus changes from a first types of vibration to a second type of vibration;

the generated addition pattern is changed from an addition pattern corresponding

to the first type of vibration to an addition pattern corresponding to the second type of vibration;
and

the adding of the outputs of selected pixels is changed from utilizing the addition
pattern corresponding to the first type of vibration to utilizing the addition pattern corresponding
to the second type of vibration when adding outputs of selected pixels.

REASONS FOR ALLOWANCE

3. The following is an examiner's statement of reasons for allowance.

This invention relates generally, to an image-capturing apparatus achieved by using a solid-state image-capturing element.

Based on applicant's amendment, with respect to claim 1 representative of claims 9, 14-15 and 17-18 the closest prior art of record (Sugiyama and Kudo), Sugiyama reference is directed to a solid-state image pickup apparatus and a control method thereof having a function of obtaining a normal image signal and additionally a computational function for executing various applications. Kudo reference is relates to an image pickup device with image blur correcting function, adapted for use in a video camera or the like. But neither Sugiyama nor Kudo teach or suggest, among other things, "an adding unit configured to generate an image by adding according to the addition pattern, outputs of selected pixels present around a given pixel at the image-capturing unit to an output of the given pixel, wherein the selected pixels are chosen according to the addition pattern; and an image processing unit configured to process the image resulting from addition executed by the adding unit; wherein: the addition pattern generating unit specifies different addition patterns corresponding to different types of vehicular behaviors; and when the detected vehicular behavior changes from a first type of vehicular to a second type of

vehicular behavior; the addition pattern generating unit changes the specified addition pattern from an addition pattern corresponding to the first type of vehicular behavior to an addition pattern corresponding to the second type of vehicular behavior; and the adding unit switches from the addition pattern corresponding to the first type of vehicular behavior to the addition pattern corresponding to the second type of vehicular behavior when adding outputs of selected pixels”.

Additionally claim 10 representative of claims 16 and 19, the closest prior art of record (Sugiyama and Kudo) do not teach or suggest, among other things, “ an adding unit configured to generate an image by adding according to the addition pattern, outputs of selected pixels present around a given pixel at an image-capturing unit having a plurality of pixels disposed two-dimensionally to an output of the given pixels, wherein the selected pixels are chosen according to the addition pattern; and an image processing unit configured to process the image resulting from addition executed by the adding unit; wherein: the addition pattern generating unit specifies different addition patterns corresponding to different types of vibration of the image-capturing apparatus changes from a first type of vibration to a second type of vibration; an addition pattern generating unit changes the specified addition pattern from an addition pattern corresponding to the first type of vibration to an addition pattern corresponding to the second type of vibration; and the adding unit switches from the addition pattern corresponding to the first type of vibration to the addition pattern corresponding to the second type of vibration when adding outputs of selected pixels”.

These key features in combination with the other features of the claimed invention are neither taught nor suggested by (Sugiyama and Kudo) prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Contact Information

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seyed Azarian whose telephone number is (571) 272-7443. The examiner can normally be reached on Monday through Thursday from 6:00 a.m. to 7:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella, can be reached at (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application information Retrieval (PAIR) system. Status information for published application may be obtained from either Private PAIR or Public PAIR.

Status information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Group Art Unit 2624
May 5, 2008*

Application/Control Number: 10/829,383
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